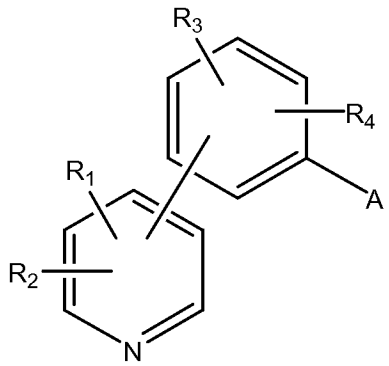
## LISTING OF THE CLAIMS

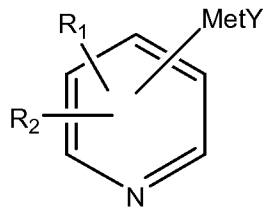
1. (Currently Amended) A method for the preparation of compound[[s]] of formula 1,




1

in which a solution containing a compound of formula 2 is added dropwise to a solution containing a compound of formula 3

2

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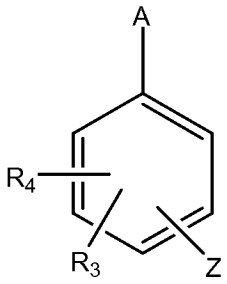



in which:

- Met represents Mg or Zn,
- Y represents Cl, Br, I or acetoxy,
- Z represents I, Br, Cl, triflate, sulphonate, phosphate,
- $R_1$, $R_2$, $R_3$, $R_4$, which are the same as one another or different, represent hydrogen, a linear and/or branched $C_1$-$C_4$ alkyl, and/or an aryl, and/or a heteroaryl, or $R_1$ and $R_2$ and/or $R_3$ and $R_4$, taken together, form a $C_3$-$C_8$ ring, an aryl and/or a heteroaryl,

- A represents -$COR_5$, where $R_5$ represents hydrogen, a linear and/or branched $C_1$-$C_4$ alkyl, and/or an aryl, and/or a heteroaryl, or
- A represents -$CR_5(OR_6)(OR_7)$ where $R_5$ has the meaning described above and $R_6$ and $R_7$, which are the same as one another or different, represent a linear and/or branched $C_1$-$C_4$ alkyl, and/or an aryl, and/or a heteroaryl, or $R_6$ and $R_7$, joined together, represent a $C_1$-$C_8$ alkyl or alkenyl, in the presence of catalytic systems based on palladium or nickel.

2. (Currently Amended) A method according to Claim 1, ~~characterized in that~~ wherein compound 2 is prepared by reaction of the corresponding halogeno-pyridine with a catalytic quantity of alkyl halide, in the presence of an at least stoichiometric quantity of magnesium.

3. (Currently Amended) A method according to Claim 2, ~~characterized in that~~ wherein 100 moles of the halogeno-pyridine are reacted with 10-20 moles of alkyl halide and 100-120 moles of magnesium.

4. (Currently Amended) A method according to Claim 2, ~~characterized in that~~ wherein the alkyl halide is a $C_1$-$C_8$ alkyl chloride or bromide.

5. (Currently Amended) A method according to Claim 4, ~~characterized in that~~ wherein the alkyl halide is ethyl bromide or isopropyl bromide or chloride.

6. (Currently Amended) A method according to Claim 1, ~~characterized in that~~ wherein compound 2 is prepared by reaction of the corresponding halogeno-pyridine with an at least stoichiometric quantity of an alkyl-magnesium halide.

7. (Currently Amended) A method according to Claim 6, ~~characterized in that~~ wherein the alkyl-magnesium halide is a chloride or a bromide of a $C_1$-$C_8$ alkyl-magnesium salt, preferably an ethyl or isopropyl magnesium salt.

8. (Currently Amended) A method according to Claim 1, ~~characterized in that~~ wherein

the palladium and/or the nickel are used in quantities of 0.01-10 moles, preferably 0.05-2 moles, per 100 moles of compound 2.

9. (Currently Amended) A method according to Claim 1, ~~characterized in that~~ wherein the solvent is an ethereal solvent, preferably THF, 1,2 dimethoxyethane, and/or 1,1-diethoxymethane, or a THF/toluene mixture.

10. (Currently Amended) A method according to Claim 1, ~~characterized in that~~ wherein it is performed at a temperature of between 20 and 100°C, preferably between 40 and 80°C.

11. (Currently Amended) A method according to Claim 1, ~~characterized in that~~ wherein it is performed in the presence of phosphines and/or phosphites.

12. (Currently Amended) A method according to Claim 11, ~~characterized in that~~ wherein the phosphines and/or phosphites are used in a molar ratio of metal:phosphine/phosphite of between 1:1 and 1:6.

13. (Currently Amended) A method according to Claim 11, ~~characterized in that~~ wherein the phosphines are selected from triaryl phosphines, diarylalkyl phosphines, trialkyl phosphines, and bidentate phosphines.

14. (Currently Amended) A method according to Claim 11, ~~characterized in that~~ wherein palladium is used in the form of complexes with phosphines, preferably as $Pd(PPh_3)_4$.

15. (Currently Amended) A method according to Claim 11, ~~characterized in that~~ wherein palladium is used in the salt form, generally in acetate or chloride form, in combination with a phosphine, preferably triphenyl phosphine.

16. (Currently Amended) A method according to Claim 11, ~~characterized in that~~ wherein nickel is used in the form of complexes with phosphines, preferably bidentate phosphines.

17. (Currently Amended) A method according to Claim 1, ~~characterized in that~~ wherein it is performed in the presence of zinc salts, preferably $ZnCl_2$, $ZnBr_2$ or $Zn(OAc)_2$.

18. (Currently Amended) A method according to Claim 17, ~~characterized in that~~ wherein the zinc salt is used in quantities of 25-120 moles, preferably 35-70 moles, per 100 moles of compound 2.

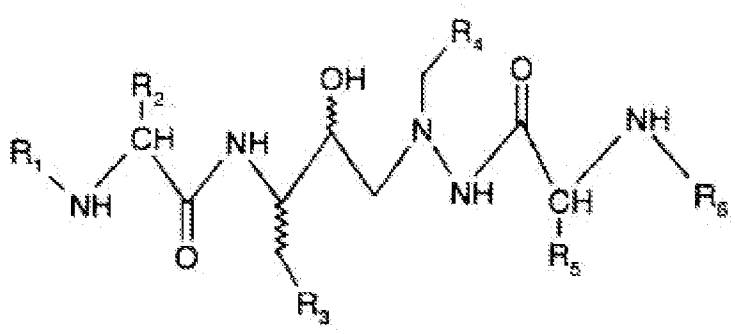
19. (Currently Amended) A method according to Claim 18 in which Met is magnesium, ~~characterized in that~~ wherein 0.01-0.1 moles of palladium and 40-70 moles of zinc are used per 100 moles of compound 2.

20. (Currently Amended) A method according to Claim 17, ~~characterized in that~~ wherein the molar ratio between palladium and compound 2 is less than 1:100.

21. (Currently Amended) A method according to Claim 1, ~~characterized in that~~ wherein compound 2 is used in a dynamic deficiency relative to the zinc salt.

22. (Currently Amended) A method according to Claim 1, ~~characterized in that~~ wherein 0.5-1.2 moles, preferably 1 mole, of compound 2 is used per 1 mole of compound 3.

23. (Currently Amended) A method for the preparation of heterocyclic azahexane derivatives with antiviral action of formula 1, ~~characterized in that it comprises a method according to claim 1~~



1

wherein in formula 1

$R_1$ is a lower alkoxycarbonyl,

$R_2$ is a secondary or tertiary lower alkyl or lower alkylthio-lower alkyl,

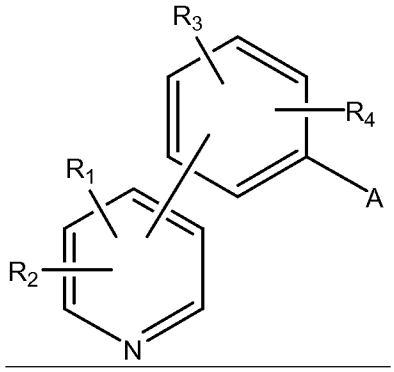
$R_3$ is phenyl that is unsubstituted or substituted by one or more lower alkoxy radicals, or C4-C8 cycloalkyl,

$R_4$ is a phenyl or cyclohexyl each susbtituted in the 4-position by unsaturated hetercycyclyl that is bonded by way of a ring carbon atom, has from 5 to 8 ring atoms, contains from 1 to 4 heteroatoms selected from nitrogen, oxygen, sulfur, sulfinyl and sulfonyl and is unsubstituted or substituted by lower alkyl or phenyl-lower alkyl,

$R_5$, independently of R2, has one of the meanings mentioned for R2, and

$R_6$, independently of R1, is lower alkoxycarbonyl,

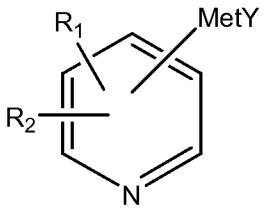
comprising preparing an intermediary of formula 2

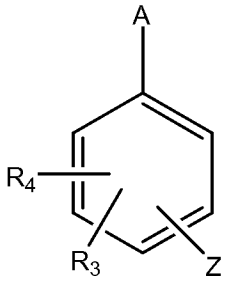



2

by a dropwise addition of a solution containing a compound of formula 3 to a solution containing a compound of formula 4

3 4




in which in formulas 2, 3, and 4:

Met represents Mg or Zn;

Y represents Cl, Br, I or acetoxy;

Z represents I, Br, Cl, triflate, sulphonate, phosphate;

$R_1$, $R_2$, $R_3$, $R_4$, which are the same as one another or different, represent hydrogen, a linear and/or branched $C_1$-$C_4$ alkyl, and/or an aryl, and/or a heteroaryl, or $R_1$ and $R_2$ and/or $R_3$ and $R_4$, taken together, form a $C_3$-$C_8$ ring, an aryl and/or a heteroaryl;

A represents $-COR_5$, where $R_5$ represents hydrogen, a linear and/or branched $C_1$-$C_4$ alkyl, and/or an aryl, and/or a heteroaryl, or

A represents $-CR_5(OR_6)(OR_7)$ where $R_5$ has the meaning described above and $R_6$ and $R_7$, which are the same as one another or different, represent a linear and/or branched $C_1$-$C_4$ alkyl, and/or an aryl, and/or a heteroaryl, or $R_6$ and $R_7$, joined together, represent a $C_1$-$C_8$ alkyl or alkenyl, in the presence of catalytic systems based on palladium or nickel.

24. (New) The method of claim 23 wherein the heterocyclic azahexane derivative is BMS-232632.